

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

69. *Paralysis from Monkshood*.—"I was consulted many years ago, respecting a case of hemiplegia, caused by eating the root of monkshood by mistake. The more immediate effects had been numbness and palsy of the tongue, followed by apoplexy, and a state of the cutaneous and mucous surfaces closely resembling that existing in fully developed purpura hemorrhagica. The apoplexy had been either associated with hemiplegia from the commencement, or the latter rapidly followed it. The patient, aged about twenty, ultimately recovered, and I lately saw him without any remains of the paralytic affection, which, however, had continued during two or three years. Paralysis from this class of powers generally affects the powers of sensation more or less remarkably."—*Copland's Dictionary*, Part 10.

T. R. B.

70. *Life Assurance*.—One of the terms of the policy was, that it should be void, if anything stated by the assured, in a declaration or statement, given by him to the directors of the insurance company before the execution of the policy, should be untrue. In this declaration, the assured stated that "he was at that time in good health, and not afflicted with any disorder, nor addicted to any habit tending to shorten life; that he had not, at any time, been afflicted with insanity, rupture, gout, fits, apoplexy, palsy, dropsy, dysentery, scrofula, or any affection of the liver; that he had not any spitting of blood, consumptive symptoms, asthma, cough or other affections of the lungs, and that one T. W. was at that time his usual medical attendant." It was urged on the part of the defendant, that the above was untrue, in this, viz., that at the time of making the declaration, he had spitting of blood, consumptive symptoms, an affection of the lungs, an affection of the liver, and a cough of an inflammatory and dangerous nature; that he was thus affected with a disorder tending to shorten life, and that he had falsely averred that T. W. was his usual medical attendant. The defendant proved on the trial, that about four years before the policy was effected, the assured had spit blood, and had subsequently exhibited other symptoms usual in consumptive subjects, and that he died of consumption, three years after the date of the policy. The judge, in summing up, read over the several issues to the jury, and in the course of it, stated to them, that it was for them to say, whether, at the time of his making the statement set forth in the declaration, the assured had such spitting of blood, and such affection of the lungs and inflammatory cough, as would have a tendency to shorten his life. It was held, that this was a misdirection, *for that, although* the mere fact of the assured having spit blood would not vitiate the policy, the assured was bound to have stated that fact to the assurance company, in order that they might make inquiry, whether it was the result of the disease called spitting of blood.—*Geach v. Ingall*, 14. *Meeson and Welsby's Exchequer Reports*.

T. R. B.

71. *On the Solubility of Oxide of Lead in pure Water*.—By Lieut.-Col. PHILIP YORHE. In a previous paper, Col. Yorhe has stated as the result of his experiments, that from 10,000 to 12,000 parts of pure water, free from access of carbonic acid, dissolved one part of oxide of lead. Bonsdorff has since confirmed these; he found that 7000 parts dissolved one part of the same. Since that time two papers have appeared on the same subject, one by Dr. Christison, and the other by Mr. R. Phillips, Jr. The latter considers that the oxide of lead is not dissolved, but merely mechanically suspended in the water, because the liquid is deprived of the lead by passing it through a paper filter. It is to this opinion that Col. Yorhe devotes the present notice.

Our author was aware that the aqueous solution of oxide of lead would not pass through a filter, but as the action of tests on the liquid was just what one observes with solutions; as no time allowed for subsidence made any difference in these appearances; as the liquid deposited crystals of oxide of lead, not only on the lead, but on other bodies; as when decomposed by the voltaic battery, it gave metallic lead at the negative pole, and peroxide at the positive, he did not consider that the stoppage of the oxide of lead by the filters was any proof of its not

being dissolved. There remains, however, this question to be answered: In what way does the paper act in retaining the oxide?

He placed some clean rods of lead in bottles of distilled water, loosely stoppered, and in this way obtained, after removing them, a clear liquid, which, when tested by sulphuretted hydrogen, gave a deep brown colour. On passing this liquid through a double filter, which had been previously washed with hot distilled water, it appeared to be very nearly deprived of lead; when two or three fluid ounces had passed through, the filters were removed, washed, then immersed in a solution of sulphuretted hydrogen, again washed and dried. Some torn fragments of the filters were then mounted in Canada balsam for examination by the microscope. On examination with powers of from 150 to 400, the fibres of the flax composing the paper were found to be browned, and, in many instances, it could be distinctly seen that the colouring substance occupied the interior of the tubular fibre. Now, it is stated by Mr. Crum, (*Philosoph. Mag.*, for April, 1844,) that cotton wool possesses the power of abstracting the oxide of lead from its solution in lime water, and that this property is made available in the processes for dyeing cotton with the chromates. Col. Yorhe found on filtering a solution of oxide of lead in lime water through a triple filter, that whereas the original solution gave a deep black, when tested by sulphuretted hydrogen, the filtered liquid gave but a pale brown, and it required that the unfiltered liquid should be diluted with thirty times its volume of water, to produce the same test as the filtered.

He then tried the effect of mere immersion of the paper in the aqueous solutions before used. A bit of filtering paper, ten inches by two inches, was boiled in distilled water, and then put into an ounce vial filled with the aqueous solution; after remaining six hours, the liquid was poured off and tested; it gave a pale brown, and it required that the liquid which had not been in contact with the paper, should be diluted with ten times its volume of water to produce the same tint. This experiment was repeated with a stronger solution of oxide of lead in water; the water was poured off at the end of four hours: it then gave a pale brown, and it required that the original liquid should be diluted with four times its bulk of water to produce the same tint. A fresh portion of the same solution was then poured on the same paper and left for a night; then, on testing, the liquid gave a brown tint, barely perceptible, and it required that the original liquid should be diluted with from fifteen to twenty times its volume of water to produce the same.

From these experiments, he deems it clear that the effect in question is dependent on a power possessed by the paper in common with several other porous bodies and organized fibres, of separating certain substances from their solutions, a power sufficiently well known, though little understood.

But there is another circumstance of some practical importance, that it may be supposed should follow as a consequence, viz., that after the fibres of the paper are saturated with the oxide of lead, then this substance should pass through in solution. To ascertain whether this was the case, he made the following experiments.

He obtained a strong aqueous solution of oxide of lead, by immersing slips of clean lead in about three quarts of distilled water, contained in a two-necked bottle, through which oxygen gas was passed and maintained in contact with, under a slight pressure. In this manner, he procured a solution, which when quite clear yielded one seven thousand five hundredths of ignited oxide of lead. A filter of paper rather less than one two hundredths of an inch thick, and four inches in diameter, was prepared and washed; then by fitting into one of the two necks of the bottle a siphon with equal legs, so as to resemble Gay Lussac's apparatus for washing filters, he was enabled to allow the filtration to go on with considerable regularity for many hours. The first portion of liquid which passed through gave a pale brown when tested: when nine fluid ounces had passed through, the effect was the same as at first. When forty fluid ounces had passed through, the liquid which was quite clear, gave a much darker tint with the test than any which had been previously obtained in the experiment. It gave a tint about equal to that given with the unfiltered liquid when diluted with its own volume of water. This the last filtered portion required to be diluted with twice its volume of water to produce the same tint as that given by the first filtered portion, after the nine

fluid ounces had passed through. The liquid now passed through the filter very slowly; when eight more fluid ounces had passed through, it was again tested, with the same result as before, except that the tint was a trifle darker.

This experiment sufficiently shows, that the effect contemplated does occur, and that it would be unsafe to trust to the action of a filter to separate oxide of lead from water for an unlimited time.—*London, Edinburgh and Dublin Philosophical Magazine*, Jan. 1846. T. R. B.

72. *Abortion produced by the Injection of an irritating Substance into the Vagina.—Death of the Female.*—During the last summer, the commissary of police of Strasburg was informed that a young female had died suddenly, under the use of substances which it was supposed had been administered for the purpose of procuring abortion. A post-mortem inspection confirmed this suspicion. The abdominal viscera were found in a state of violent inflammation, and the intestines were gangrenous. These appearances were attributed to the employment of some corrosive and irritant substance which had been applied to the vagina; and the conclusion was, that the deceased had died from the effects of abortion artificially induced. M. GERHARDT, who had attended the deceased, stated, that when he was first called, the symptoms led him to suspect that there had been some criminal attempt to procure abortion. Deceased admitted that a female had given her some substance which had excited violent pain. Delivery took place the day following, and in a few days afterwards she died.

The nature of the substance used as an abortive could not be determined; but it was clear, from the effects observed, that it possessed corrosive properties, and that it had led to the death of the deceased. The prisoner was convicted upon the evidence, and condemned to ten years' imprisonment.—*Lond. Med. Gaz.*, Jan. 1846, from *Gazette Médicale de Paris*, Jan., 1846.

73. *M. Bonjean on the Elimination of Arsenic, &c., from the System.*—One of the most important questions connected with Legal Medicine is that which regards the absorption of poisons. It is only within these few years, however, that light has begun to be thrown upon this department of animal physiology, by means of chemistry; much, therefore, is still wanting in the study of the phenomena embraced by it, and it is the duty of the chemist to seize every opportunity which enables him to throw additional light on this important subject. The interesting trial which lately occurred at Auch, (the result of which was clearly foreseen at the very commencement of the debates,) has furnished me an occasion to substantiate a fact, intimately associated therewith; and which may be of service to legal medicine. It will perhaps be recollected that one feature in the case was, that the presumed victim, Lacoste, had, for some time previous to his death, been using a secret medicine, for the purpose of curing himself of an eruption of long standing; but he had ceased taking the medicine for fifteen days previous to his death; and on this point the prosecutor laid great stress. This fact being established, or at least supposed to be so, the prosecutor drew from it this conclusion, that Lacoste died from poisoning by arsenic, wilfully administered to him a short time previous to his death, and that the arsenic found in the various organs of his body, by the Parisian chemists, could be attributed to no other source. This conclusion so dreadful to the accused, may be given as follows:—*In the course of fifteen days, our organs free themselves entirely of any arsenic which may have been introduced into them by absorption; and, after this short interval of time, every phenomenon referable to the presence of the poison has disappeared.* This proposition, dangerous in itself, and which nothing authorizes us to admit, is far from being in harmony with facts of a similar nature related by celebrated men. On the contrary, it has of late been established, that in certain animals, such as the dog and the sheep, the elimination of arsenic is not complete before the lapse of *four or six weeks*. M. Flandin, one of those chemists who has made this question a subject of deep study, found traces of arsenic in the viscera of an animal which did not die till thirty-five days after the administration of the poison. But it may be asked, does absorption go on in the same way in man as in animals? Does this physiological action proceed in every case in an equal, uniform, and constant manner during the whole course of its continuance within the system? Well-observed facts are indeed wanting to